[0102] Some embodiments may be described using the expression "coupled" and "connected" along with their derivatives. It should be understood that these terms are not intended as synonyms for each other. For example, some embodiments may be described using the term "connected" to indicate that two or more elements are in direct physical or electrical contact with each other. In another example, some embodiments may be described using the term "coupled" to indicate that two or more elements are in direct physical or electrical contact. The term "coupled," however, may also mean that two or more elements are not in direct contact with each other, but yet still co-operate or interact with each other. The embodiments are not limited in this context.

[0103] As used herein, the terms "comprises," "comprising," "includes," "including," "has," "having" or any other variation thereof, are intended to cover a non-exclusive inclusion. For example, a process, method, article, or apparatus that comprises a list of elements is not necessarily limited to only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. Further, unless expressly stated to the contrary, "or" refers to an inclusive or and not to an exclusive or. For example, a condition A or B is satisfied by any one of the following: A is true (or present) and B is false (or not present), A is false (or not present) and B is true (or present), and both A and B are true (or present).

[0104] In addition, use of the "a" or "an" are employed to describe elements and components of the embodiments herein. This is done merely for convenience and to give a general sense of the invention. This description should be read to include one or at least one and the singular also includes the plural unless it is obvious that it is meant otherwise.

[0105] Upon reading this disclosure, those of skill in the art will appreciate still additional alternative structural and functional designs for a system and a process for providing financial transactions using a distributed ledger through the disclosed principles herein. Thus, while particular embodiments and applications have been illustrated and described, it is to be understood that the disclosed embodiments are not limited to the precise construction and components disclosed herein. Various modifications, changes and variations, which will be apparent to those skilled in the art, may be made in the arrangement, operation and details of the method and apparatus disclosed herein without departing from the spirit and scope defined in the appended claims.

What is claimed is:

1. A computer-implemented method of processing transaction messages in a consensus network, the method comprising:

  receiving, at a Messagenode of the consensus network, a plurality of transaction batches;

  broadcasting, by the Messagenode, a message identifying the received transaction batches and a target in a distributed ledger;

  receiving, at the Messagenode, a number of acknowledgments of the message by other Messagenodes of the consensus network;

  transmitting, by the Messagenode and responsive to the number of acknowledgments exceeding an acknowledgment threshold, an accept request;

  receiving, at the Messagenode, a number of accepted messages from other Messagenodes of the consensus network; and

  selecting, responsive to the number of accepted messages exceeding an acceptance threshold, the plurality of transaction batches to be written to the target block.

2. The computer-implemented method of claim 1, wherein the plurality of transaction batches each include a single transaction message.

3. The computer-implemented method of claim 1, wherein a transaction batch includes a plurality of transaction messages received by a validation node in time period of predetermined length.

4. The method of claim 1, wherein the broadcast message includes a vector comprising an identifier of each transaction batch.

5. The method of claim 1, wherein the acknowledgment threshold is two-thirds of a total number of Messagenodes in the consensus network.

6. The method of claim 1, wherein the accept request includes an identifier of each of the other Messagenodes that acknowledged the message.

7. The method of claim 1, wherein the acceptance threshold is defined as 2f+1, where f is a maximum allowable number of faulty Messagenodes.

8. The method of claim 1, further comprising removing duplicate transaction batches before writing transaction batches to the target block.

9. The method of claim 1, wherein the target block is an empty block built at a time before receiving of the plurality of transaction batches.

10. The method of claim 1, wherein the distributed ledger comprises a blockchain and the target is a block of the blockchain.

11. A non-transitory computer-readable medium comprising instructions that, when executed by a Messagenode of a consensus network, cause the Messagenode to:

  receive a plurality of transaction batches;

  broadcast a message identifying the received transaction batches and a target in a distributed ledger;

  receive a number of acknowledgments of the message by other Messagenodes of the consensus network;

  transmit, responsive to the number of acknowledgments exceeding an acknowledgment threshold, an accept request;

  receive a number of accepted messages from other Messagenodes of the consensus network; and

  select, responsive to the number of accepted messages exceeding an acceptance threshold, the plurality of transaction batches to be written to the target block.

12. The non-transitory computer-readable medium of claim 11, wherein the plurality of transaction batches each include a single transaction message.

13. The non-transitory computer-readable medium of claim 1, wherein a transaction batch includes a plurality of transaction messages received by a validation node in time period of predetermined length.

14. The non-transitory computer-readable medium of claim 11, wherein the broadcast message includes a vector comprising an identifier of each transaction batch.

15. The non-transitory computer-readable medium of claim 11, wherein the acknowledgment threshold is two-thirds of a total number of Messagenodes in the consensus network.